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THE CIRCLE THAT IS NOT A CIRCLE.

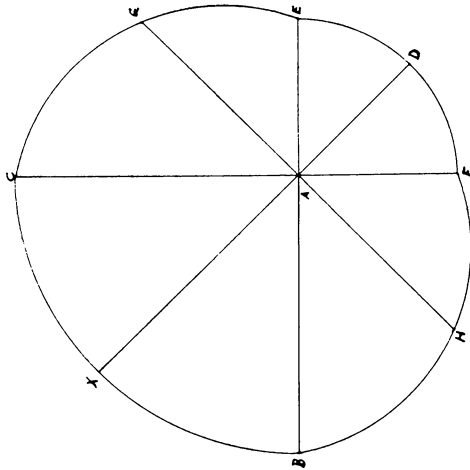
By C. E. WARFEL, Wamego, Kan.

A GOOD many years ago, while teaching in a college in Illinois, a proposition one day suggested itself to me, and after several futile efforts the figure herein presented was evolved and some experiments made in its practical application to machinery and to determine whether or not it was mechanically correct.

Little attention was further given it for several years, until one evening about a year ago, in a casual conversation with the learned secretary of this Society, it was presented to him, and his curiosity was thereby aroused and he requested that it be submitted to the Academy.

THE PROPOSITION.

Construct a plane figure which is not a circle such that passing in a straight line through a certain point within from perimeter to perimeter it will be same distance across in every direction.



CONSTRUCTION.

First.—With any point A as a center, and with any radius X, construct a quadrant of any circle BC.

Second.—With the same point A as a center, and with any greater (or less) radius D, construct a quadrant of another circle EF directly opposite the quadrant BC.

Third.—Construct a line GH perpendicular to the bisector of the two arcs BC and EF.

Fourth.—Locate a point on the line GH in both directions from the point A at a distance equal to one-half the sum of the two radii X and D from the point A.

Fifth.—With an arc of a circle determined by the three points B, H and F connect such three points.

Sixth.—Also, with an arc of a circle determined by the three points C, G and E, connect the three said points C, G and E.

An engine builded with the outline of the casing constructed on this curve allows no escape of power and allows the application of the power on the ends of levers far from the fulcrum, and so little speed is needed, and consequently little wear on the machinery results.

With the same mechanism water power can be utilized to the very limit of its potential efficiency, as no water can escape until the machine turns, so a small flow with a high head can be readily controlled.

In fact, any kind of a power engine may be so constructed which will allow high or low speed with safety, and without the wrench and strain on the machinery found in the slide-valve engine.

A model of such an engine constructed for the use of steam is now in the possession of the secretary of this Society, and by actual test verifies the principles above stated.
